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Atty. Docket No.: P69949US0

REMARKS

The Office Action mailed July 13, 2005, has been carefully reviewed and, by this Amendment, claims 1-28 have been amended and claims 29-33 have been added. Claims 1-33 are pending in the application. Claims 1 and 33 are independent.

The Examiner objected to claim 11 as containing informalities which Applicants have corrected herein. Applicants have also amended the abstract, drawings and specification to remove informalities noted therein.

The Examiner rejected claims 11 and 14 under 35 U.S.C. 112, second paragraph, as being indefinite. By this Amendment, Applicants have amended the claims to ensure proper antecedent basis and bring them into conformity with the requirements of 35 U.S.C. 112, second paragraph. Favorable reconsideration and withdrawal of the rejection is requested.

The Examiner rejected claims 1-7, 12, 13, 15, 17, 20, 24, 25, 27 and 28 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,575,020 to de Charmoy Gray et al. ("the de Charmoy Gray patent"). Under 35 U.S.C. 103(a), the Examiner rejected claims 8-10, 16, 18, 19, 21-23 and 26 as being unpatentable over the de Charmoy Gray patent, and rejected claim 11 as being

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unpatentable over the de Charmoy Gray patent in view of U.S. Patent No. 5,101,669 to Holm-Kennedy et al.

The de Charmoy Gray patent is assigned to Cantion A/S, and the present invention is also assigned to Cantion A/S. Therefore, under 35 U.S.C. 103(c), upon provision of evidence establishing common ownership at the requisite time, the de Charmoy Gray patent is not prior art against the present application for the purposes of an obviousness rejection if such patent qualifies as prior art only under one or more of subsections (e), (f) and (g) of 35 U.S.C. 102.

However, Applicants note that a PCT application corresponding to the de Charmoy Gray patent, as cited in the present application by Information Disclosure Statement filed September 27, 2004, was published as WO 00/66266 on November 9, 2000 ("the de Charmoy Gray PCT application"). Therefore, taking the same position as that of the Examiner with respect to the de Charmoy Gray patent, the de Charmoy Gray PCT application would constitute prior art against the present application under 35 U.S.C. 102(b).

However, in view of the claim amendments as presented herein, claim 1 is patentable over the prior art. More particularly, as set forth in amended claim 1, the present

invention is directed to a sensor for detecting a substance in a liquid. The sensor includes a primary substrate with a sensor unit connected thereto, the primary substrate being shaped as a pillar and having an uppermost surface. The sensor further includes a detector for detecting a change of stress or mass generated on a surface area of the sensor unit, and an electric communication line including a pair of wires for applying a voltage over the detector. At least one of the wires is integrated in the pillar shaped primary substrate *such that the distance between the integrated wire and the uppermost surface of the primary substrate differs along the length of the wire.* This is not shown or suggested by the prior art.

The de Charmoy Gray patent and corresponding de Charmoy Gray PCT application (hereinafter "the de Charmoy Gray references") disclose a micro-liquid handling system having an integrated micro-cantilever. As shown in Figure 1 of the de Charmoy Gray references and referred to by the Examiner, the system includes a sensor having a primary substrate or supporting body (the base portion that is not numbered), and a sensor unit 3. The sensor unit 3 includes a detection system for measuring changes in the mechanical properties of the cantilever 2. Electrical contact to the detection elements in the sensor 3 is provided by an electric

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communication line 4 that includes electrical wires that "are placed *on top of* the supporting body" (emphasis added) (column 10, lines 60-61 of the de Charmoy Gray patent).

While Applicants do not consider the supporting body shown in Figure 1 to be pillar-shaped, it is presumed that the Examiner is relying upon the portions defined by the inclined sidewall surfaces on either side of the channel that approach the spacer layer 5. The electrical wires of the communication line 4 are not, therefore, "integrated" within the pillar-shaped structure but are merely "on top of" the uppermost surface of such structure. More significantly, none of the wires making up the communication line 4 are shown or suggested to be integrated in the pillar shaped primary substrate *such that the distance between the integrated wire and the uppermost surface of the primary substrate differs along the length of the wire*. Rather, the wires lie on top of, and apparently parallel with, the uppermost surface of the primary substrate so that the distance between the wires and the uppermost surface is essentially constant along the length of the wires. This would be true even if the "primary substrate" were interpreted as including the supporting body in combination with the spacer layer 5 such that the uppermost surface would correspond with the cover plate 6.

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For at least the foregoing reasons, claim 1 is patentable over the de Charmoy Gray references. Favorable consideration and allowance of claim 1 is therefore requested.

Claims 2-32 are also in condition for allowance as claims properly dependent on an allowable base claim and for the subject matter contained therein.

New claim 33 is also patentable over the cited art for at least the same reasons as claim 1. More particularly, the prior art does not teach a sensor for detecting a substance in a liquid, the sensor including a primary substrate *shaped as a pillar having an upper end and a lower end*, with a sensor unit connected to and protruding from the upper end so that an angle between the upper surface of the sensor unit and the uppermost surface of the primary substrate is between about 135° and about 225°, a detector for detecting a change of stress or mass generated on a surface area of the sensor unit, and an electric communication line for applying a voltage over the detector, at least part of which communication line is *integrated in the pillar shaped primary substrate so as to extend from the upper end to the lower end*. Nor is there anything in the de Charmoy Gray references to suggest such an orientation of the communication line within the pillar-shaped primary substrate relative to the protruding sensor unit as arranged adjacent the

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upper surface of such primary substrate. Favorable consideration and allowance thereof is therefore respectfully requested.

With the foregoing amendments and remarks, the present application is in condition for allowance. Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,

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IN THE DRAWINGS:

With this Amendment, Applicants have provided a Replacement Sheet of the first drawing sheet containing Figures 1, 3 and 5. In the Replacement Sheet, Figure 1 has been properly designated as "Prior Art". Approval and entry thereof is requested.